

Editorial Comment

The Burden of Cardiac Rhythm Management Complications

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The expanded use of cardiac rhythm management devices (CRMDs) during the last 20 years has substantially improved the quality of life of our patients and in many cases has been convincingly proved to improve long-term prognosis and survival rates.^{1,2} However, we have to be aware that CRMDs are a paradigm of a demanding, high-cost therapy that should be used in carefully selected patients by well trained physicians in appropriately selected centers. The most important justification of this fact is the profound impact that complications of CRMDs can have on our patients' health and on health care systems.³ Although a plethora of studies have been published on the medical aspects of CRMD-related complications, there is a lack of data regarding their financial impact. In this context, the article by Fanourgiakis et al⁴ in this issue of the HJC provides valuable information that needs to be taken into consideration by health providers and health payers.

Prolongation of hospitalization is the most common index of increased health costs and it has a profound financial effect. In the study by Fanourgiakis et al, the average prolongation of the hospital stay for patients presenting with a complication was 7 days, ranging from 1 to 35 days. Based on 2012 Greek National Health System charges, the overall additional direct cost per complication, including hos-

pitalization cost, medication cost, laboratory and imaging diagnostic examinations, was €17,411. The important contribution of this study is that, for the first time in Greece, an evidence-based approach has evaluated the direct cost of CDRM complications.

The most important limitation of this study is that the rate of complications was very low, significantly lower than that reported by other studies. The low incidence of complications in this observational study of cardiac pacing can be attributed either to selection bias or to the fact that the authors' center is a referral center, where the experience and quality of service may be higher than average. Given the importance of this economic analysis, which is augmented by the unfavorable effects of the economic crisis on health costs, we need to expand the value of this work by focusing on the cost of complications as a factor that influences the overall cost of each CRMD procedure in every center on a countrywide basis.

In order to do so, we have to establish a countrywide registry that would include every CRMD implantation and prospectively follow the patients for at least one year in order to record complications. By doing so, based on the data on the economic costs of complications presented in the study by Fanourgiakis et al, we shall be able to reliably calculate the overall cost of treatment with a CRMD.

Why is knowledge of financial implications important for our patients?

The apparent benefits of following such a strategy are the validation of the quality of practice and the improvement of management of health costs in this section of public health. But most importantly, such a strategy may also facilitate the adaptation of advances in cardiac pacing. For example, we do not really know the true additional cost of leadless pacing, because we do not have reliable data to address the additional costs of complications related to transvenous pacing, taking into account the cost of common complications such as pocket infection and lead dislodgment.

Hence, trying to accurately calculate the incidence and cost of CRMD-related complications is not only of economic importance. Most importantly, it is a valuable first step towards improving care for our patients using recent advances in the field of pacing that, despite a higher front cost, may be cost-effective because of the lower costs of complications. Meanwhile, these data should be used to improve the quality of our practice, focusing on the prevention of

common complications that have an enormous effect on both patients and health payers.

References

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